

Listing of Claims

This listing of the claims will replace all prior versions, and listings, of claims in the application. Deleted material is shown in ~~strikethrough~~; or shown in ~~[[double brackets]]~~ to show the deletion of five or fewer characters. Inserted material is underlined, to show the changes made.

1. (Currently Amended) A magnetic material detection device comprising:
a magnet displaceable in the direction of magnetic poles; and
10 ~~detecting means with an operating point for detecting~~
~~displacement of the magnet by the action that isodynamic lines of the~~
~~magnet cross the operating point,~~
a Hall device for detecting displacement of the magnet, having
an operating point whose magnetic state the Hall device outputs,
15 ~~wherein the magnetic material detection device detects that a~~
~~magnetic material located outside the magnetic material detection~~
~~device body is located at a given position where a predetermined~~
~~distance is far from said magnetic material detection device body, by~~
~~detecting the displacement of the magnet~~
20 characterised in that the magnet and the Hall device are
disposed such that on/off state of the Hall device changes when the
magnet is displaced such that the boundary line of the magnet's poles
crosses the operating point, enabling to detect that the magnetic
material is displaced within the predetermined distance from the body of
25 the magnetic material detection device.
2. (Currently Amended) A magnetic material detection device according to
claim 1 comprising returning means for returning the magnet to the given an
original position where the magnet is not displaced if the ~~magnet material is~~
30 ~~initially located at the given position, and then it is moved to a position which is~~
~~far from the given position~~ from a position where the magnet is displaced.

3. (Currently Amended) A magnetic material detection device according to claim 1 ~~comprising an elastic body for returning the magnet to the given position, whose one end is connected to the magnet side and whose other end is connected to the magnetic material detection device body 2 wherein the~~
5 returning means is configured by a plate spring.

4. (Currently Amended) A magnetic material detection device according to claim 1 comprising a supporting member for supporting the magnet and second
10 magnet which is different from said magnet, whose one end is connected to the magnet and whose other end is connected to the second magnet,

wherein the second magnet locates near a displacement path of the magnetic material.

15 5. (Original) A magnetic material detection device according to claim 1 wherein the configuration of the magnet is any one of a cube, a rectangular solid, a cylinder or a pipe.

6. (Previously Presented) A mobile object detection system comprising the
20 magnetic material detection device according to claim 1 and the mobile object comprising the magnetic material.

7. (New) A magnetic material detection device comprising:
a magnet displaceable in the direction of magnetic poles; and
25 a Hall device for detecting displacement of the magnet, having an operating point whose magnetic state the Hall device outputs, characterised in that the magnet and the Hall device are disposed such that on/off state of the Hall device changes when the magnet is displaced such that the boundary line of the magnet's poles crosses the
30 operating point, enabling to detect that the magnetic material is displaced within the predetermined distance from the body of the magnetic material detection device; and

a supporting member for supporting the magnet and second magnet which is different from said magnet, whose one end is connected to the magnet and whose other end is connected to the second magnet, wherein the second magnet locates near a displacement path of the magnetic material.

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